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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,183	08/22/2003	Sebastien Weitbruch	PD020083	9060

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EXAMINER	
WILLIS, RANDAL L	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,183	WEITBRUCH ET AL.	
	Examiner	Art Unit	
	Randal L. Willis	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to amendments in application No. 10/646,183 filed June 28th 2007. Claims 1-12 are pending and have been considered.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement filed August 22, 2003 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (2003/0052841) in view of Wells (US 5,371,515) and Shigeta (US 6,646,625).

Apropos claim 1 and 7, Tanaka teaches:

Method for processing video picture data (Video signal, Fig. 6) for display on a display device (16) having a plurality of luminous elements corresponding to pixels of a video picture (discharge cell 12, [0121] lines 1-6), wherein the brightness of each pixel is controlled by at least one sub-field code word ([0121] lines 8-12) with which the luminous element/s are

activated or inactivated for light output in small pulses corresponding to sub-fields in a video frame, wherein a sub-field has assigned a sub-field weight, the sub-field weight determining the length in time a pixel is activated during this sub-field ([0054]), the method comprising the steps of

Gradation processing (Gradation conversion circuit capable of reducing input from 10 to 8 bits, Fig. 6) said video picture data (Video signal Fig. 6) and

sub-field coding (Subfield coding circuit, Fig. 6) said gradation processed video picture data for brightness control,

However Tanaka fails to explicitly teach:

Using dithering in the gradation conversion processes and

Transforming said video picture data according to a retinal function before dithering.

In the same field of displaying digital images, Wells teaches a method of transforming input video signals into different ranges of intensity (abstract, see also transfer curve Fig. 5C), and then applying dithering after the intensities have been mapped (Fig. 4 dithering occurs at 240, after intensity values mapped).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the transfer function and dithering of

Wells in the processing steps of Tanaka in order to achieve greater accuracy in low intensity displays and thus produce higher quality images (Abstract).

Further, Tanaka and Wells fail to explicitly teach:

Applying a specific code in the step of sub-field coding in which by corresponding bit entries it is avoided that in a frame period a sub-field is inactivated between two activated sub-fields and where the sub-field weights are adapted to grow according to the inverse retinal function, thereby integrating the inverse transformation of the dithered video picture data in a step of sub-field coding.

In the same field of driving plasma display panels, Shigeta teaches a method of selective erasing that prevents a non-light emitting phase from being surrounded by light-emitting phases (See Fig. 30). Further, the subfield luminance values simulate a exponential curve, which means the weights are adapted to grow similar to the inverse retinal function (See luminance emissions in Fig. 30)

Apropos claim 2 and 8, Wells teaches:

Method according to claim 1, wherein said transforming includes an expansion of low video levels of brightness and a compression of high video levels of brightness (Fig. 5C, higher slope at low input intensities leads to expansion, lower slope at higher intensities lead to compression).

Apropos claim 3 and 9, Wells teaches:

Method according to claim 1, wherein said retinal function for transforming input values to output values is a logarithmic function (Col 6 lines 22-25).

However Wells fails to explicitly teach the function being $y= a \log_{10}(b+cx)$, where a, b, and c are real numbers.

While Wells doesn't explicitly teach the state function, the logarithmic function used by Wells approximates the eyes sensitivity therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use a common logarithmic function, such as the one derived from Weber-Fechner law as the logarithmic function of Wells device in order to closely match the human sensitivity curve.

Apropos claim 4 and 10, the combination of Wells and Tanaka doesn't explicitly teach wherein said retinal function is applied via a look-up table. However, Tanaka utilizes Look-up tables for other data calculation, (LUT Fig. 6) and it would have been obvious to one of ordinary skill in the art at the time of the invention to apply a similar process to other data calculations such as the transfer function of Wells in order to reduce computational time.

Apropos claim 5 and 11, Tanaka teaches, wherein weights for the sub-field coding are computed using the inverse retinal function (Tanaka teaches subfield coding using the parameters of APL, [0077] combined with Wells teaching of mapping intensities to different sub ranges would lead to the inverse function of Wells being applied to subfield pulses.).

Apropos claim 6 and 12, Wells teaches:

Method according to claim 1, wherein the dithering step has the characteristic that with one sub-field more video levels are rendered in the high video level range than in the low video level range (Expansion of low intensities and compression of high intensities shown in Fig. 5C achieves this effect).

Response to Arguments

7. Applicant's arguments filed 6/28/07 have been fully considered but they are not persuasive.

a. Applicant's argument that Tanaka does not relate to a plasma display technology is wrong on two accounts. Firstly, applicant should be made aware that the limitation of plasma technology is not stated anywhere in the claims. Secondly, in [0002] Tanaka clearly states that his invention relates to a method for a plasma display panel.

b. Applicants argument that Tanaka does not teach the use of sub-field weights is also not persuasive. Tanaka teaches the number of sustain cycles for each sub-field is different, the number of sustain cycles is interpreted as the weight of the sub-field ([0053] and [0054]).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

c. Ohe 2003/017415 for teaching modifying video levels before dithering.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randal L. Willis whose telephone number is (571) 270-1461. The examiner can normally be reached on Monday to Friday from 7:30am to 5:00pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RLW

AMR A. AWAD
SUPERVISORY PATENT EXAMINER